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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,993	11/12/2003	Per Persson	07589.0075.NPUS01	2992

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EXAMINER
ESHETE, ZELALEM

ART UNIT	PAPER NUMBER
3748	

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

E

Office Action Summary	Application No.	Applicant(s)	
	10/605,993	PERSSON ET AL.	
	Examiner	Art Unit	
	Zelalem Eshete	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *7* is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1:121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the amendment filed on 2/28/2006.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,2,6 are rejected under 35 U.S.C. 102(e) as being anticipated by Meneely et al. (6,386,160).

Regarding claim 1: Meneely discloses an apparatus for an internal combustion engine in which for each cylinder and associated piston (see figure 1), at least one inlet valve and at least one exhaust valve is provided for respectively controlling connection between a combustion chamber of the cylinder and an intake system and an exhaust system (see column 4, lines 20 to 33), said apparatus comprising: a pivotable rocker arm for selectively opening at least one of said valves (see figure 1), a first cam follower fixedly mounted on said rocker arm and interacting with a rotating cam to pivot said rocker arm to open said at least one valve at a first rotational position of said cam (see

numeral 40), a second cam follower adjustably mounted on said rocker rocker arm (see numeral 154), the second cam follower being hydaulically adjustable between two positions with respect to said rocker arm by means of a piston located in a hydraulic cylinder (see figures 7,8); the hydraulic cylinder being connectable to a hydraulic fluid source via a hydraulic fluid duct (see numeral 110,90,91); and the piston being moveable from one position to another by action of a quantity of hydraulic fluid being delivered to the hydraulic cylinder (see figures 1,2).

Regarding claim 2: Meneely discloses a control valve (see numeral 81) and a non-return valve being connected between the hydraulic fluid source and the hydraulic cylinder (see numeral 182 and the check valve adjacent numeral 86).

Regarding claim 6: Meneely discloses an apparatus for controlling the activity of inlet and exhaust pistons that cooperate with inlet and exhaust ports, respectively, of an internal combustion engine (see figure 1; column 4, lines 20 to 33) the apparatus comprising: a rotatable cam having at least one cam lobe (see numerals 12,14) the rotatable cam being configured to be positioned relative to first and second cam followers so that a revolution of the rotatable cam causes the cam lobe to actuate either one or both of the first and second cam followers in accordance with different operational modes of said internal combustion engine (see figure 1; column 9, line 50 to column 10, line 10); the first cam follower being stationarily mounted to a pivotable rocker arm (see numeral 40); the second cam follower being movably mounted to said

rocker arm (see numeral 152); and a hydraulic controller interconnecting the second cam follower and the rocker arm for varying the relative position between (see numeral 81).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2,4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meneely in view of Schechter (6,223,846).

Regarding claim 2: Meneely discloses the claimed invention as recited above; however, fails to specifically label the check valve adjacent numeral 86).

However, Schechter teaches a control valve a non-return valve being connected between the hydraulic fluid source and the hydraulic cylinder (see numerals 250, 236, 220).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Meneely's device by providing a check valve as taught by Schechter in order ensure one directional fluid flow from the fluid source to the cylinder.

Regarding claim 4: Meneely discloses the claimed invention as recited above; however, fails to disclose the piston is fitted in a double acting piston cylinder.

However, Schechter teaches the piston is fitted in a double acting piston cylinder (see figure 3A, numeral 218).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Meneely's device by providing a double acting piston cylinder as taught by Schechter in order to improve the positioning accuracy of the piston by hydraulically controlling the piston in both directions.

5. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meneely in view of Bunker et al. (6,067,946).

Meneely discloses the claimed invention as recited above; however, fails to disclose the control valve is actuatable by switching between two pressure levels in a hydraulic circuit connected to the fluid source.

However, Bunker teaches the control valve is actuatable by switching between two pressure levels in a hydraulic circuit connected to the fluid source (figure 1). Bunker teaches that such arrangement minimizes the power required to actuate the valve by making use of valve inertia (see abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Meneely's device by providing switching between two

pressure levels as taught by Bunker in order to minimizes the power required to actuate the valve by making use of valve inertia as taught by Bunker.

6. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meneely in view of Schechter as applied to claim 4 above; and further in view of Diehl et al. (2004/0055547).

Menneely as modified above discloses the claimed invention as recited above; however, fails to disclose the control valve in one control position connects the hydraulic fluid source to one side of the piston via the non-return valve, and another side of the piston is connected to a drainage port for hydraulic fluid, and the non-return valve configured to shut off-flow towards the hydraulic fluid source.

However, Diehl teaches the control valve in one control position connects the hydraulic fluid source to one side of the piston via the non-return valve, and another side of the piston is connected to a drainage port for hydraulic fluid, and the non-return valve configured to shut off-flow towards the hydraulic fluid source (see figure 1). Diehl further teaches such arrangement results in the movements of the valve being able to be controlled in a very precise manner (see paragraph 0004).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Meneely as modified above by providing the arrangement as taught by Diehl in order to precisely control the valve movement as taught by Diehl.

Allowable Subject Matter

7. Claim 7 is allowed.

Response to Arguments

8. Applicant's arguments filed 2/28/2006 have been fully considered but they are not persuasive.

9. With respect to applicant's argument on pages 6,7: Meneely discloses the second cam follower in that the cam follower is subject to actuation by the cam lobe wherein such arrangement affect the valve opening/closing condition (see figure 3; column 5, lines 27 to 37).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zelalem Eshete whose telephone number is (571) 272-4860. The examiner can normally be reached on Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zelalem Eshete
Examiner
Art Unit 3748

THOMAS DENION
SUPERVISORY PATENT EXAMINER
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